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McKenna

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(54) **LAMP ASSEMBLY**

(71) Applicant: **Steelcase Inc.**, Grand Rapids, MI (US)

(72) Inventor: **Mark McKenna**, East Grand Rapids, MI (US)

(73) Assignee: **Steelcase Inc.**, Grand Rapids, MI (US)

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F21V 14/02	(2006.01)
F21V 21/30	(2006.01)
F21S 6/00	(2006.01)
F21V 33/00	(2006.01)

(52) **U.S. Cl.**
CPC ***F21V 21/06*** (2013.01); ***F21V 14/02*** (2013.01); ***F21V 21/30*** (2013.01); *F21S 6/002* (2013.01); *F21V 33/004* (2013.01)

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See application file for complete search history.

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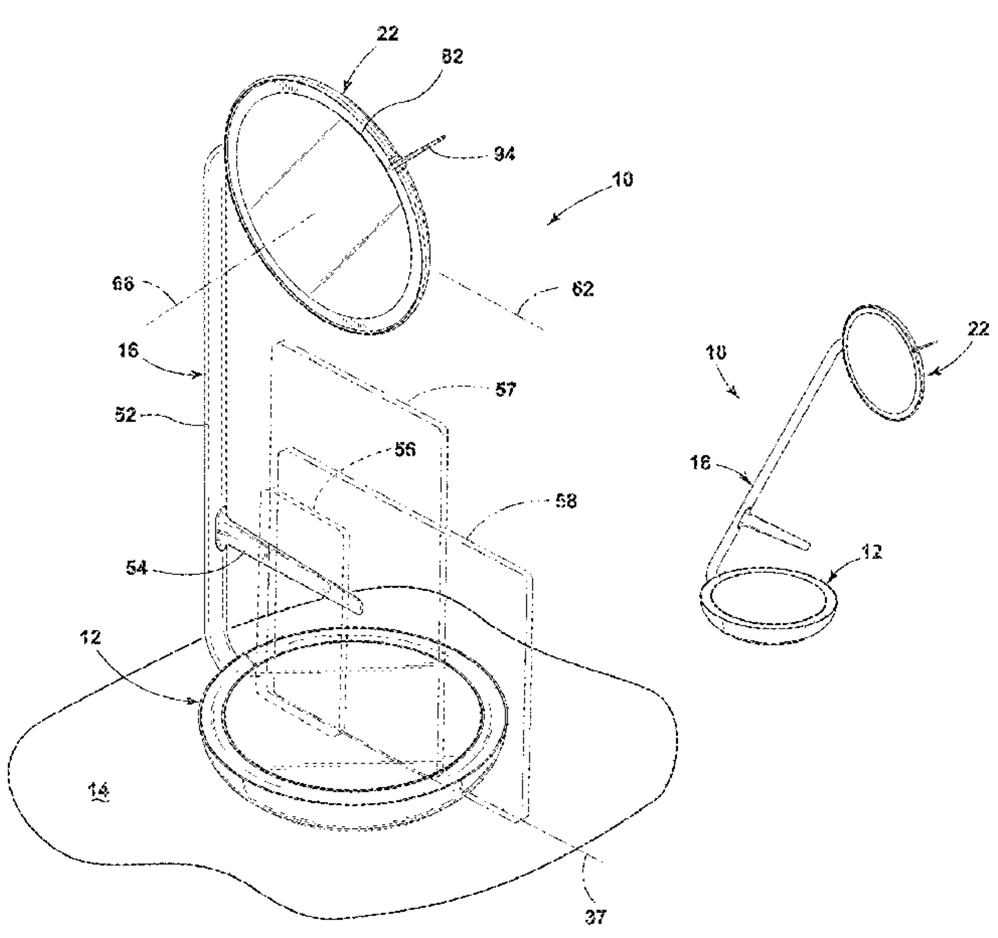
Primary Examiner — Jong-Suk (James) Lee
Assistant Examiner — James M Endo
(74) *Attorney, Agent, or Firm* — Price Heneveld LLP

(57) **ABSTRACT**

A lamp assembly includes a base, a support arm coupled to the base, a housing coupled to the support arm, a mirror supported by the housing, a light arrangement supported in the housing, wherein the base, the support arm, and the housing are reconfigurable between a first configuration where the housing is located vertically above the base and a reflective surface of the mirror is parallel with a worksurface, a second configuration where the housing is located vertically above the base and the reflective surface is perpendicular to the worksurface, and a third configuration where the housing is located at least partially rearward of the base and the reflective surface is substantially perpendicular to the worksurface. The lamp assembly may further include a support member configured to cooperate with the base to support a personal communication device, and a rotatable portion of the housing which controls a light intensity.

28 Claims, 5 Drawing Sheets



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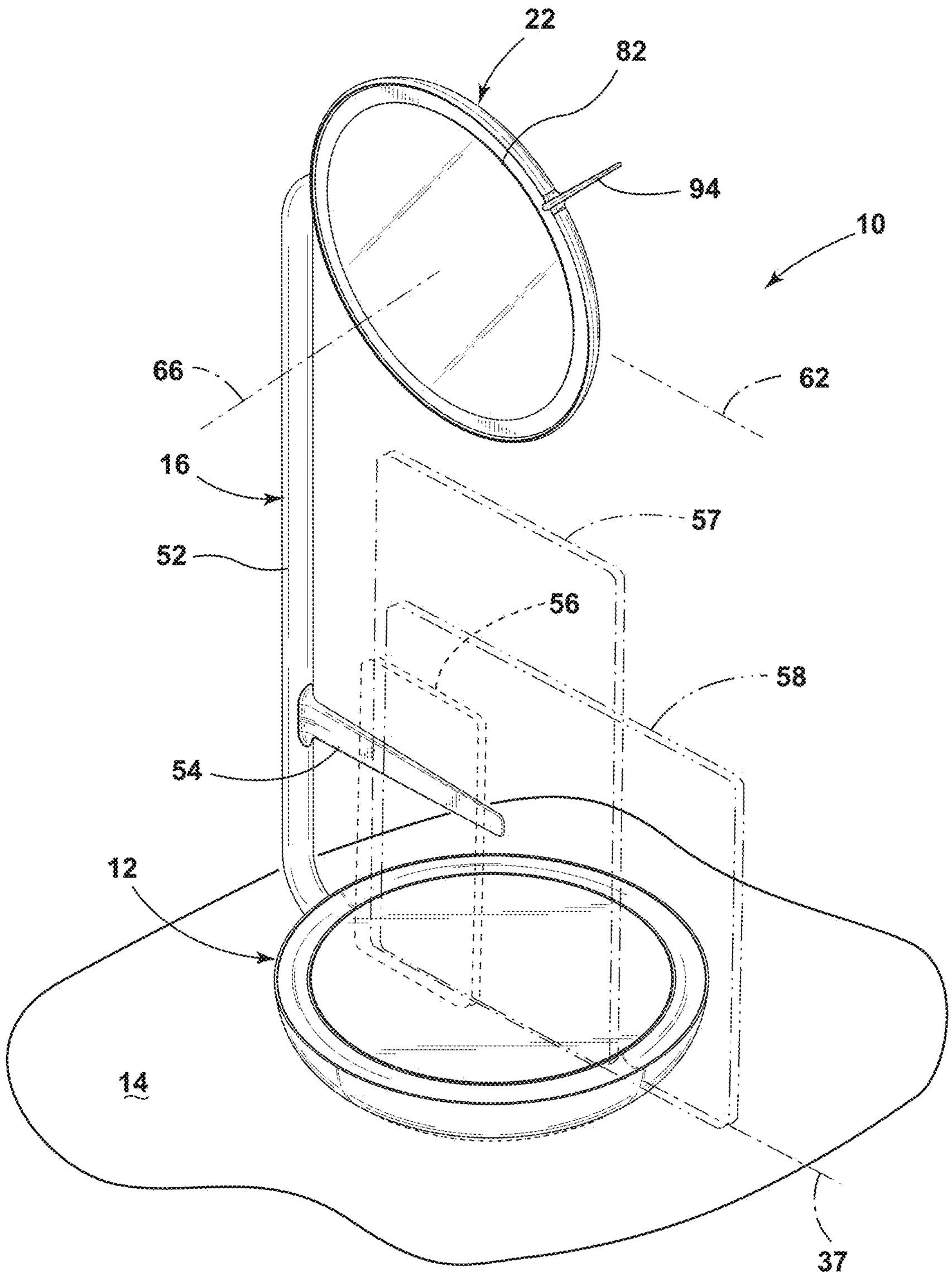


FIG. 1

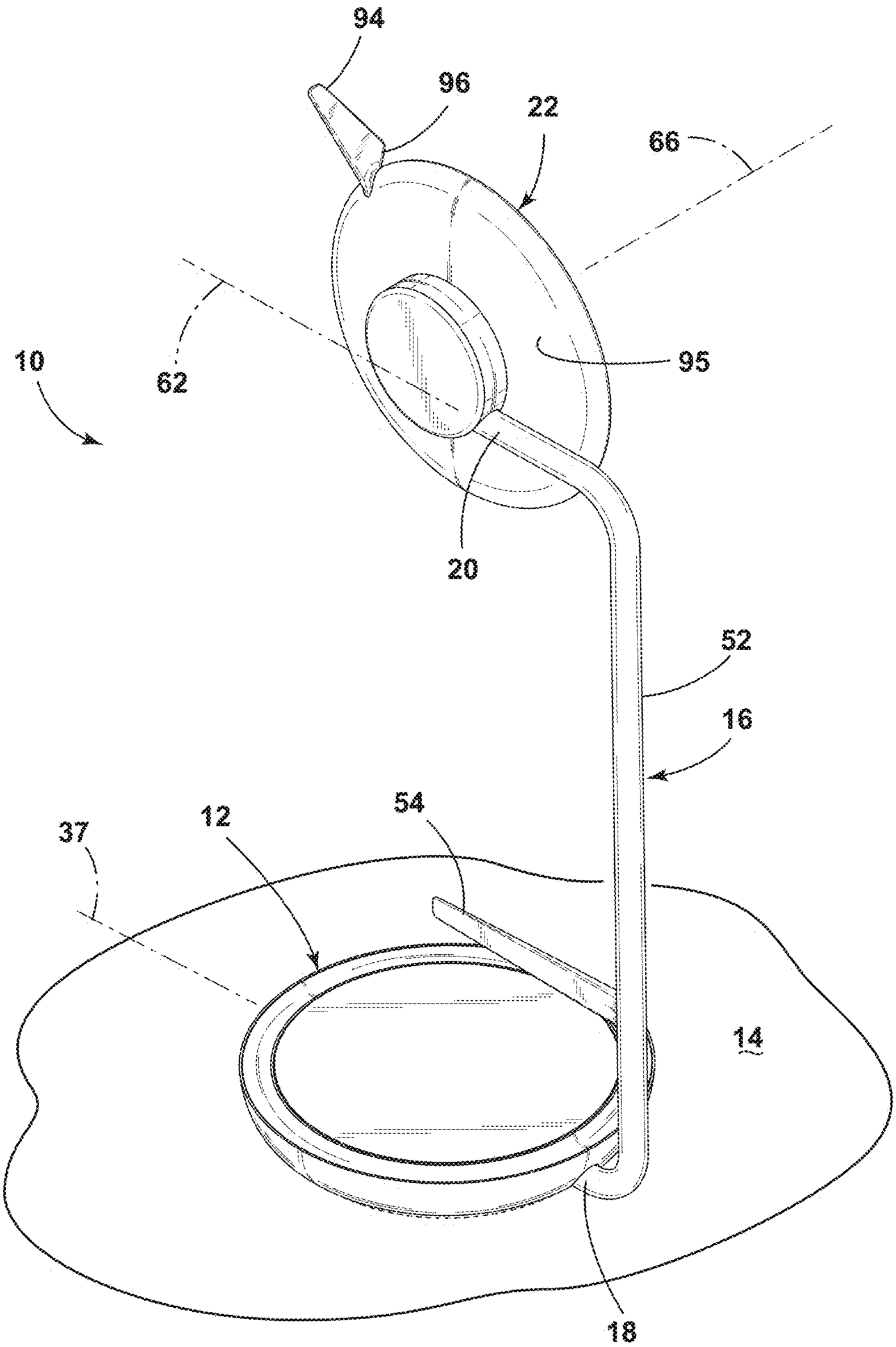
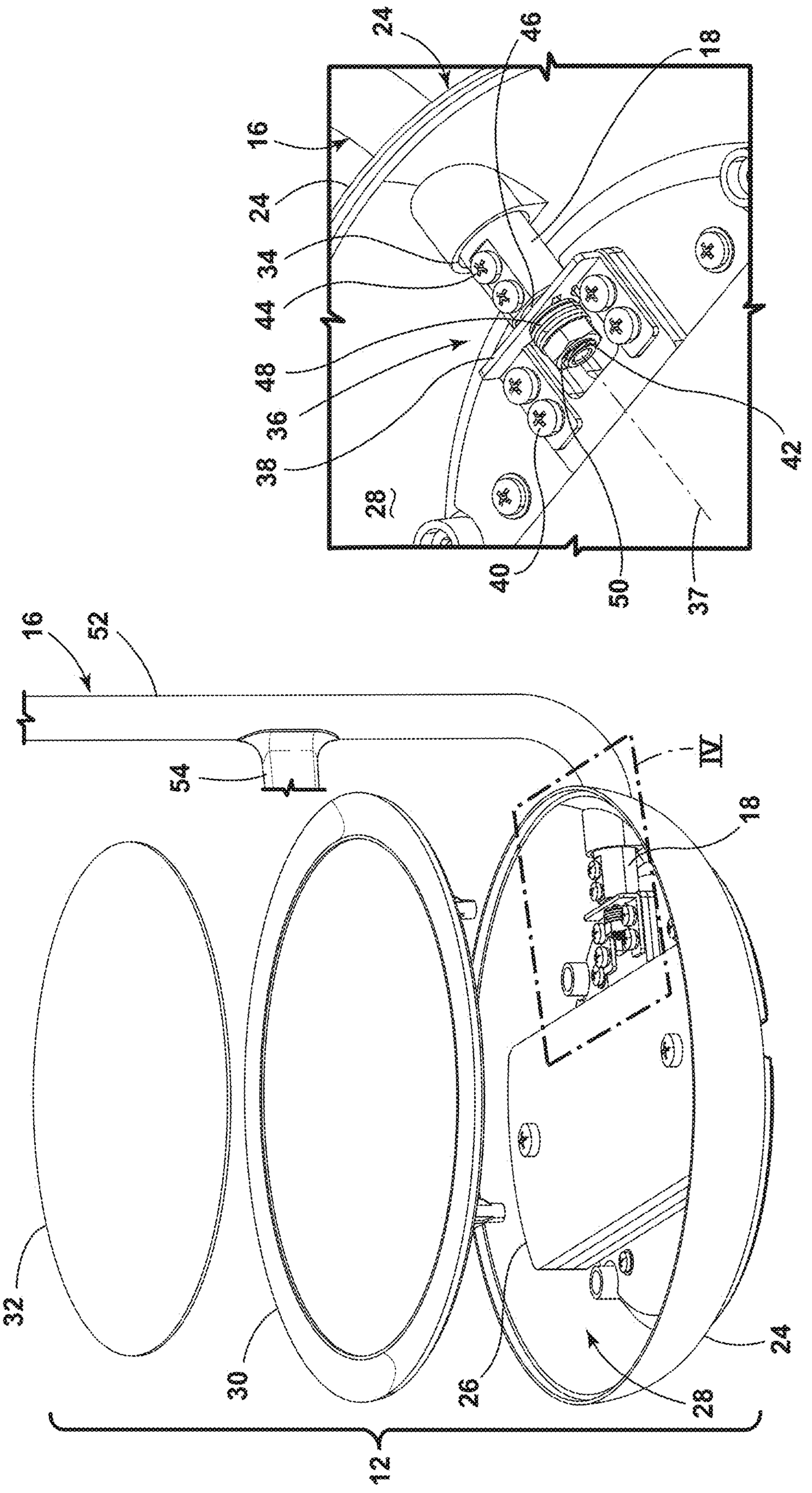


FIG. 2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IV
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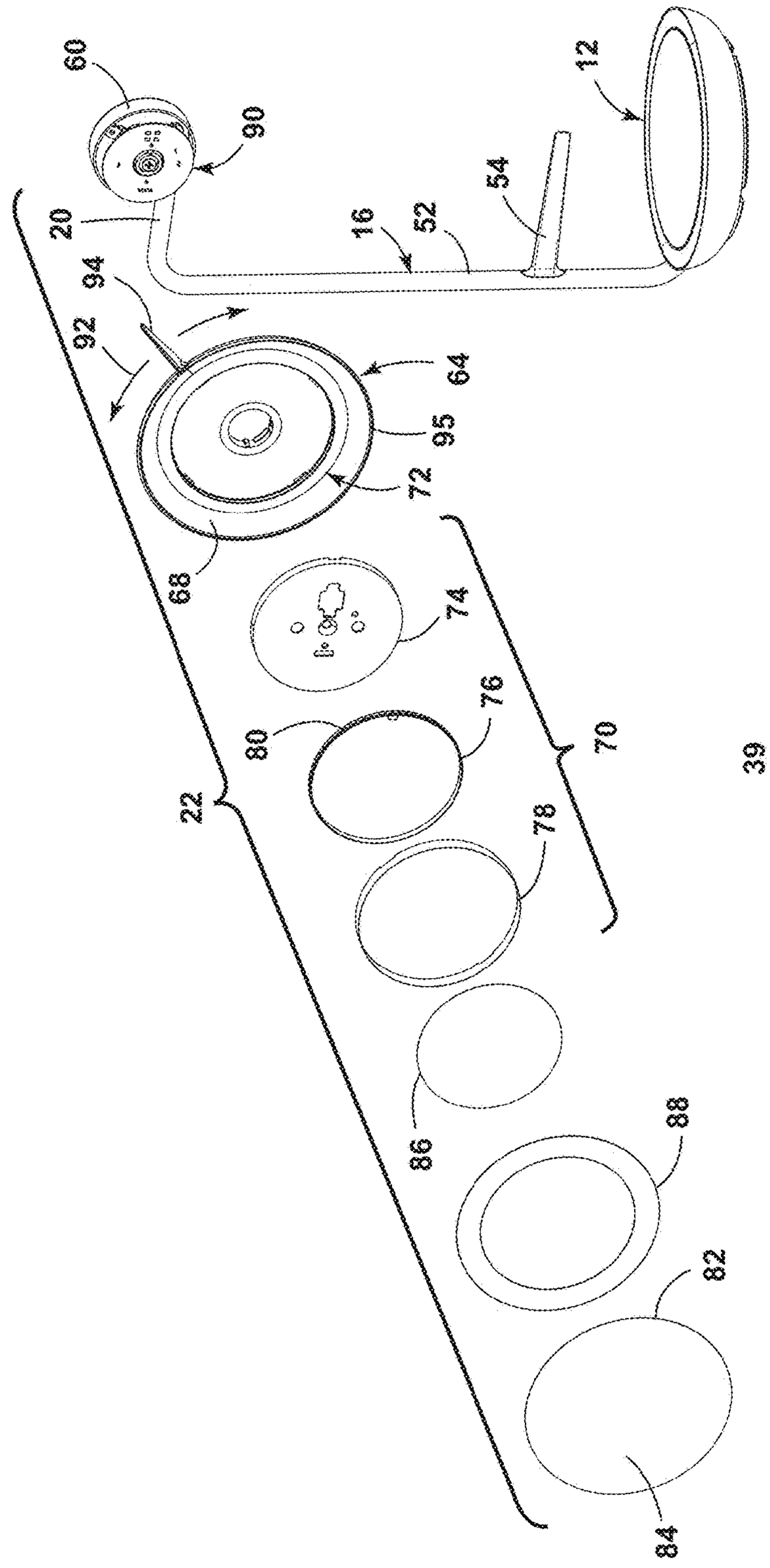
30
26
28
24
12

FIG. 4

FIG. 3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64
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82
84

FIG. 5

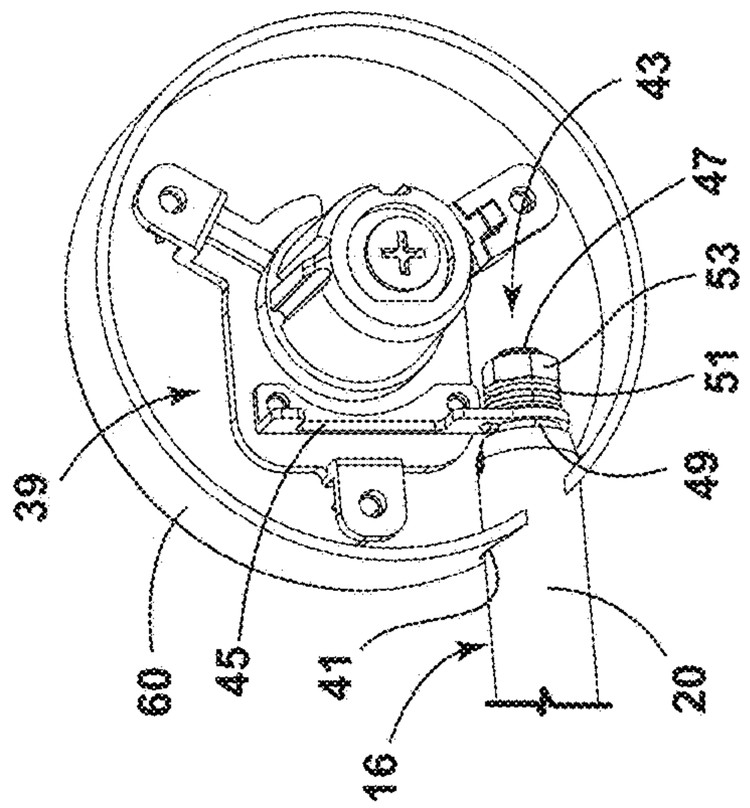
43
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FIG. 6

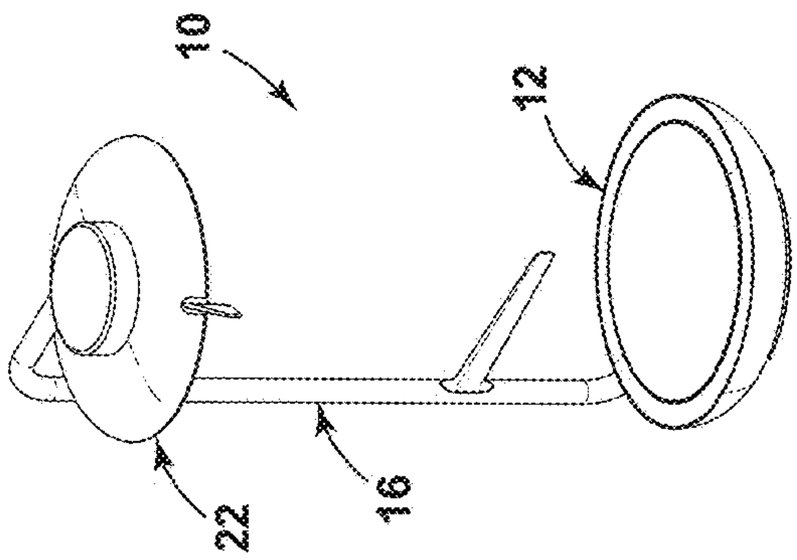

FIG. 7C

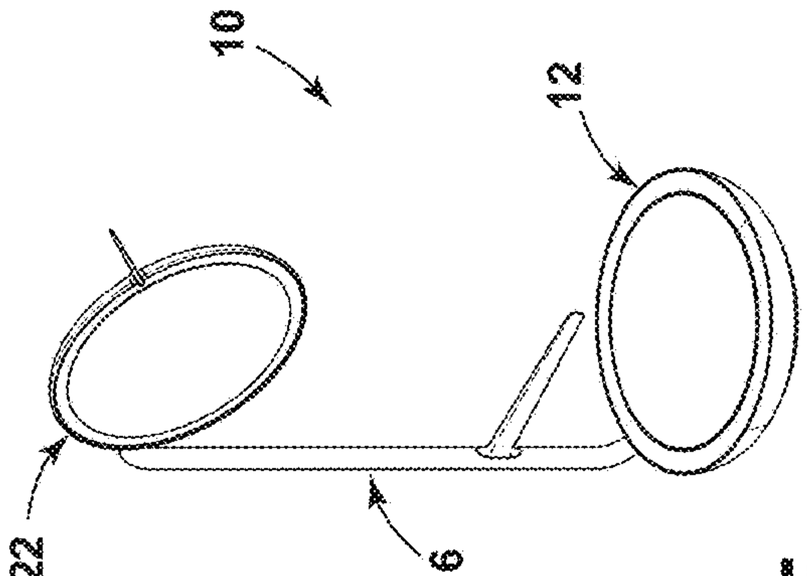

FIG. 7

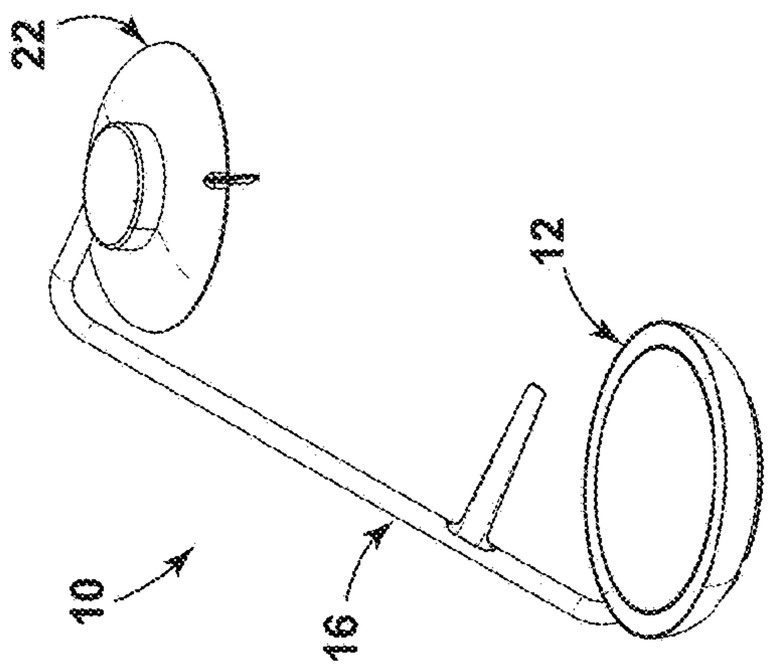

FIG. 7B

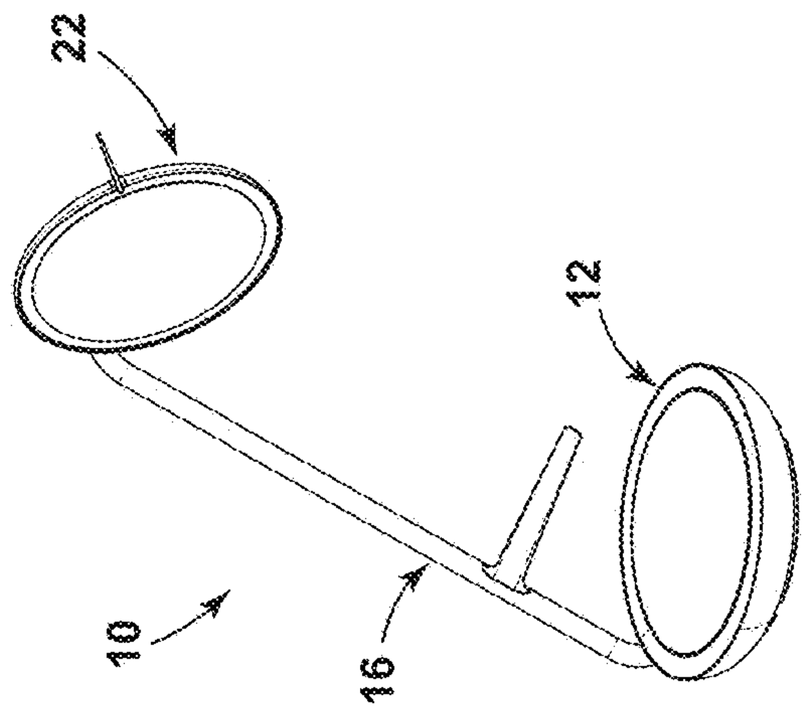

FIG. 7E

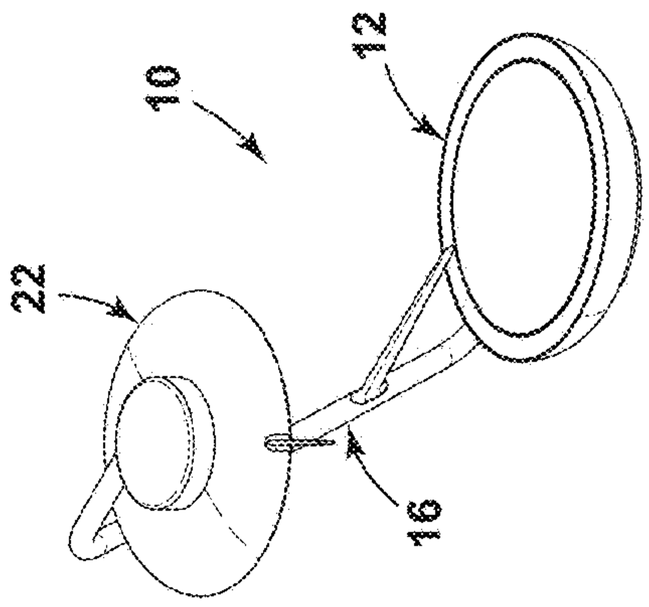

FIG. 7A

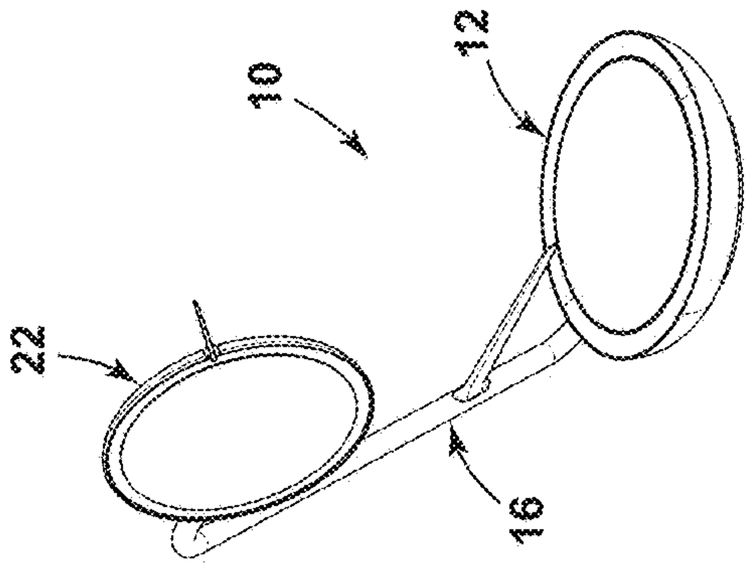

FIG. 7D

LAMP ASSEMBLY

BACKGROUND OF THE INVENTION

These various embodiments as disclosed herein relate to a lamp assembly configurable between various modes of operation, including modes providing worksurface lighting and/or modes providing facial lighting and feedback to the user during videoconferencing.

SUMMARY OF THE INVENTION

A lamp assembly as disclosed herein may include a base configured to be supported on a worksurface, a support arm having a first end pivotably coupled to the base, and a second end, a housing pivotably coupled to the second end of the support arm, and a mirror supported by the housing and having a reflective surface facing in a first direction. The lamp assembly may further include a light arrangement supported in the housing and including a light element, the light arrangement configured to emit a light in the first direction, wherein the base, the support arm, and the housing are reconfigurable between a first configuration where the housing is located vertically above the base and the reflective surface is substantially parallel with the worksurface, a second configuration where the housing is located vertically above the base and the reflective surface is substantially perpendicular to the worksurface, and a third configuration where the housing is located at least partially rearward of the base and the reflective surface is substantially perpendicular to the worksurface.

The lamp assembly may further or alternatively include a base configured to be supported on a worksurface, a support arm having a first end operably coupled to the base, and a second end, a housing operably coupled to the second end of the support arm, and a lighting arrangement supported in the housing and including a lighting element configured to emit a light, wherein the lamp assembly is reconfigurable between a first configuration where the light is directed downwardly toward the worksurface, and a second configuration where the light is directed forwardly toward the face of the seated user. The lamp assembly may further include a support member coupled to and extending outwardly from the support arm, wherein the base and the support arm are configured to cooperate to support a personal communication device such that a camera of the personal communication device is directed toward the face of the seated user.

The lamp assembly may further or alternatively include a base configured to be supported on a worksurface, a support arm having a first end operably coupled to the base, and a second end, a housing assembly operably coupled to the second end of the support arm and having a central axis, the housing assembly including a hood and a graspable handle extending from the hood, and a light arrangement supported by the housing assembly and including a light element configured to emit a light, the hood operably coupled to the light element such that rotation of the hood about the central axis controls an intensity of the light.

These and other features, advantages, and objects of the present invention will be further understood and appreciated by those skilled in the art by reference to the following specification, claims, and appended drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a front perspective view of a lamp assembly;

FIG. **2** is a rear perspective view of the lamp assembly;

FIG. **3** is an exploded partial perspective view of a base assembly of the lamp assembly;

FIG. **4** is a perspective view of the area IV; FIG. **4**;

FIG. **5** is an exploded perspective view of the lamp assembly;

FIG. **6** is an enlarged perspective view of a connection between a housing and a support arm;

FIG. **7**A is a perspective view of the lamp assembly in a forwardly-oriented desk lamp mode configuration;

FIG. **7**B is a perspective view of the lamp assembly in a rearwardly-oriented desk lamp mode configuration;

FIG. **7**C is a perspective view of the lamp assembly in an ambient lighting mode configuration;

FIG. **7**D is a perspective view of the lamp assembly in a forwardly-oriented videoconferencing mode configuration;

FIG. **7**E is a perspective view of the lamp assembly in a rearwardly-oriented videoconferencing mode configuration; and

FIG. **7**F is a perspective view of the lamp assembly in a centered or centrally-oriented videoconferencing mode configuration.

DETAILED DESCRIPTION

For purposes of description herein, the terms "upper," "lower," "right," "left," "rear," "front," "vertical," "horizontal," and derivatives thereof shall relate to the invention as oriented in FIGS. **1** and **2**. However, it is to be understood that the invention may assume various alternative orientations, except where expressly specified to the contrary. It is also to be understood that the specific devices and processes illustrated in the attached drawings, and described in the following specification are simply exemplary embodiments of the inventive concepts defined in the appended claims. Hence, specific dimensions and other characteristics relating to the embodiments disclosed herein are not to be considered as limiting, unless the claims expressly state otherwise.

FIGS. **1** and **2** illustrate a lamp assembly **10** that includes a base assembly **12** supportable or supported on a worksurface **14**, a support arm **16** having a first end **18** pivotably coupled to the base assembly **12**, and a second end **20** pivotably coupled to a housing assembly **22**. The lamp assembly **10** is reconfigurable between various in-use and storage/shipping mode configurations as described herein.

As best illustrated in FIG. **3**, the base assembly **12** may include a housing **24**, a counterweight arrangement **26** located within an interior **28** of the housing **24**, and a cover **30** connected to the housing **24** via a plurality of mechanical fasteners, such as screws, not shown, and such that the cover **30** cooperates with the housing **24** to enclose the interior **28**. The housing assembly **22** may also include a cover pad **32** attached to an upper surface of the cover **30**.

The first end **18** (FIGS. **3** and **4**) of the support arm **16** may extend into the interior **28** of the housing **24** via an aperture **34** of the housing **24**, and may be pivotably coupled to the housing assembly **22** via a frictional bearing arrangement **36** such that the support arm **16** may rotate about a pivot axis **37**. In the illustrated example, the frictional bearing arrangement **36** includes an L-shaped support member **38** fixedly coupled to the housing **24** via a plurality of mechanical fasteners, such as screws **40**, and a threaded extension **42** that is received through an aperture (not shown) of the support member **38** and into the open first end **18** of the support arm **16**, where the extension **42** is secured to the second end **20** of the support arm **16** via a plurality of mechanical fasteners such as screws **44**. The support member **38** is frictionally held between a friction washer or plate

46, and a plurality of locking washers **48**, where the locking washers **48** are held in position via a nut **50** threadably received on the threaded extension **42**. The friction washer **46** may comprise plastic, nylon, oil impregnated plastic, and the like.

The support arm **16** has a C-shaped overall configuration where the first end **18** and the second end **20** may extend orthogonally from a vertical portion **52**. The support arm **16** may also include a support member **54** (FIGS. **1** and **2**) that extends substantially orthogonally from the vertical portion **52** of the support arm **16** in a substantially horizontal direction. In the illustrated example, the support member **54** is tapered along the length thereof, with the support member **54** narrowing from the proximal end toward the distal end thereof. The support member **54** is configured to cooperate with the base assembly **14** to support personal electronic devices, such as phones **56**, tablets **57** in a portrait orientation, tablets **58** in a landscape orientation, and the like, in an orientation that is conducive to a seated user utilizing the device, and in particular for videoconferencing functions as further described below, including horizontal and vertical orientations.

The housing assembly **22** (FIGS. **1**, **2** and **5**) may include a first portion **60** pivotably coupled with the second end **22** of the support arm **16** for pivoting about a pivot axis **62**, and a second portion **64** rotatably coupled with the first portion **60**, such that the second portion **64** is configured to pivot about a pivot axis **66**. As best illustrated in FIG. **6**, the second end **20** of the support arm **16** may extend into an interior **39** of the first portion **60** of the housing assembly **22** via an aperture **41** of the first portion **60**, and may be pivotably coupled to the first portion **60** via a frictional bearing arrangement **43** such that the first portion **60** and the overall housing assembly **22** may rotate about the pivot axis **62**. In the illustrated example, the frictional bearing arrangement **43** includes a support member **45** fixedly secured to the first portion **60**, and a threaded extension **47** that is received through an aperture (not shown) in the support member **45** and into the open second end **20** of the support arm **16**. The support member **45** is frictionally held between a friction washer or plate **49**, and a plurality of locking washers **51**, where the locking washers **51** are held in position via a nut **53** threadably received in the threaded extension **47**. The friction washer **49** may comprise nylon, plastic, oil impregnated plastic, and the like.

In the illustrated example, the second portion **64** of the housing assembly **22** is bell-shaped and includes a reflective surface **68** which may be coated with a reflective material, such as brass, where the reflective surface **68** may be arcuately-shaped. A lighting arrangement **70** is located within an interior **72** of the second portion **64**, where the lighting arrangement **70** may include a heat sink **74**, an LED board **76**, and a diffuser **78**. The LED board **76** may be provided with a cylindrical or circular configuration where a plurality of individual LEDs **80** are spaced about the LED board **76**. Similarly, the diffuser **78** may be provided with a cylindrical or circular configuration where the LED board **76** is secured to an outer surface of the heat sink **74** and the diffuser **78** encircles the LED board **76**. A mirror **82** having a reflective outer surface **84** is located within the second portion **64** and may be secured to the heat sink **74** via a double-sided tape **86**. A disk-shaped reflector **88** may be secured to the mirror **82** opposite the reflective surface **84**.

A rotary encoder **90** is coupled to the first portion **60** and the second portion **64**, and operably coupled to the lighting arrangement **70**, and is operable so as to control the light intensity of light emitted from the LED board **76**. Specifically, the rotary encoder **90** is coupled to the first portion **60** and the second portion **64** of the housing assembly **22** such that rotational movement of the second portion or hood **64** of the housing assembly **22** about the pivot axis **66** in the directions **92** actuates the rotary encoder **90** so as to control the light intensity of the light emitted from the LED board **76**. It is noted that during operation, second portion or hood **64**, the reflective surface **68**, the tab **94**, and a portion of the rotary encoder **90** rotate together as a single unit as the intensity of the light emitted from the lighting arrangement **70** is adjusted. It is also noted that other light control arrangements in addition to or alternatively to the rotary encoder **90** may be utilized, including but not limited to a potentiometer.

The second portion **64** (FIGS. **2** and **5**) of the housing assembly **22** may include a graspable tab or lever **94** extending from a main body portion **95** of the second portion **64**. In the illustrated example, the tab or handle **94** extends outwardly from an outermost peripheral edge of the main body portion **95** of the second portion **64** so as to be easily graspable by the user. It is also noted that the tab **94** may include a forwardly extending edge **96** also configured to aid in a user grasping the tab **94**. Further, the configuration and orientation of the tab **94** with respect to the second portion **64**, the housing assembly **22**, and the overall lamp assembly **10** provides the user with a distinct visual impression such that the user can easily remember preferred light intensities as previously identified and experienced while adjusting and using the lamp assembly **10**.

The overall lamp assembly **10** is easily reconfigurable between a plurality of use modes, including a forwardly-oriented desk lamp mode (FIG. **7**A) where the housing assembly **22** is positioned forwardly of the base assembly **12** and the light emitted from the lighting arrangement **70** is directed toward the worksurface **14** while the reflective surface **68** faces the worksurface **14**, a rearwardly-oriented desk lamp mode (FIG. **7**B) where the housing assembly **22** is positioned rearwardly of the base assembly **12** and the light emitted from the lighting arrangement **70** is directed toward the worksurface **14** while the reflective surface **68** faces the worksurface **14**, an ambient lighting mode (FIG. **7**C) where the housing assembly **22** is positioned directly vertically above the base assembly **12** and the light emitted from the lighting arrangement **70** is directed toward the worksurface **14** while the reflective surface **68** faces the worksurface **14**, a forwardly-oriented videoconferencing mode (FIG. **7**D) where the housing assembly **22** is positioned at least partially forward of the base assembly **12** and is rotated such that the light emitted from the lighting arrangement **70** is directed toward the face of a seated user and the reflective surface **68** faces the face of the seated user and such that the lighting arrangement **70** and the reflective surface **68** might be positioned relatively closer to the face of the user, a rearwardly-oriented videoconferencing mode (FIG. **7**E) where the housing assembly **22** is positioned at least partially rearward of the base assembly **12** and rotated such that the light emitted from the lighting arrangement **70** is directed toward the face of the seater user and the reflective surface **68** faces the face of the seated user and such that the lighting arrangement **70** and the reflective surface **68** might be positioned relatively further away from the face of the user, and a centered or centrally-oriented videoconferencing mode (FIG. **7**F) where the housing assembly is positioned directly above the base assembly **12** and is rotated such that the light emitted from the lighting arrangement **70** is directed toward the face of a seated user and the reflective surface faces the face of the seated user

and such that the lighting arrangement **70** and the reflective surface **68** might be positioned at an intermediate distance from the user. It is noted that in the various videoconferencing modes, the housing assembly **22** may be positioned forwardly, rearwardly or directly above the base assembly **12**, and that the base assembly **12**, the support arm **16** and the housing assembly **22** may extend at various relative angles with respect to one another to allow the lamp assembly **10** to be adapted for use in numerous seating configurations by users of varying heights. It is further noted that the overall lamp assembly **10** is highly effective for use during videoconferencing, where the lamp assembly **10** provides support for the user's personal electronic device, such as a phone **56** or tablet **58** directing the screen toward the face of the seated user, the lighting arrangement **70** provides optimally controllable lighting of the user, and the mirror **82** provides the user with an immediate feedback as to the effects of the lighting. Specifically, the overall adjustability of the lamp assembly **10** allows the user to simultaneously optimize the lighting effects provided by the lamp assembly **10** and positioning of the personal electronic device regardless of the sitting or standing position of the user, allowing the user to adjust the positioning and orientation of the personal electronic device, the intensity of the light emitted from the lighting arrangement, the relative angle at which the light emitted from the lighting arrangement illuminates the user's face, and the distance between the lighting arrangement and the user, and provides immediate feedback to the user via the reflective surface or mirror, thereby allowing the user to adjust the lamp assembly **10** and to achieve the videoconferencing image or effects as desired.

In the foregoing description, it will be readily appreciated by those skilled in the art that alternative combinations of the various components and elements as described herein and modifications thereto may be made without departing from the concepts disclosed herein. Such modifications are to be considered as included in the following claims, unless these claims by their language expressly state otherwise.

The invention claimed is:

1. A lamp assembly, comprising:

a base configured to be supported on a worksurface;

a support arm having a first end rotationally pivotably coupled to the base, and a second end;

a housing rotationally pivotably coupled to the second end of the support arm;

a mirror supported by the housing and having a reflective surface facing in a first direction; and

a light arrangement supported in the housing and including a light element, the light arrangement configured to emit a light in the first direction;

wherein the base, the support arm, and the housing are reconfigurable between a first configuration where the housing is located vertically above the base and the reflective surface is substantially parallel with the worksurface, a second configuration where the housing is located vertically above the base and the reflective surface is substantially perpendicular to the worksurface, and a third configuration where the housing is located at least partially rearward of the base and the reflective surface is substantially perpendicular to the worksurface.

2. The lamp assembly of claim **1**, wherein the housing is located at least partially forward of the base, when the base, the support arm and the housing are in the first configuration.

3. The lamp assembly of claim **1**, wherein the base, the support arm and the housing are further reconfigurable into a fourth configuration where the housing is located at least partially directly vertically above the base.

4. The lamp assembly of claim **1**, wherein the lighting arrangement includes at least one light emitting diode.

5. The lamp assembly of claim **4**, wherein the at least one light emitting diode includes a plurality of light emitting diodes.

6. The lamp assembly of claim **1**, wherein the lighting arrangement includes a lighting element that extends about a periphery of the mirror.

7. The lamp assembly of claim **1**, wherein the lighting arrangement includes a reflective member extending about a periphery of the mirror, and wherein the reflective member redirects the light toward the first direction.

8. The lamp assembly of claim **1**, further comprising:

a support member coupled to and extending from the support arm and configured to support a personal communication device.

9. The lamp assembly of claim **8**, wherein the support member includes a substantially rigid bar extending substantially perpendicular to the support arm.

10. The lamp assembly of claim **1**, wherein the lighting arrangement is configured to control the intensity of the light.

11. The lamp assembly of claim **10**, wherein the housing includes a hood that at least partially houses the light arrangement, and wherein rotation of the hood controls the intensity of the light.

12. The lamp assembly of claim **11**, wherein the housing includes a graspable handle extending outwardly from an outer periphery of the hood.

13. The lamp assembly of claim **10**, wherein the lighting arrangement includes a rotatory encoder configured to control the intensity of the light.

14. A lamp assembly, comprising:

a base configured to be supported on a worksurface;

a support arm having a first end operably coupled to the base, and a second end;

a housing operably coupled to the second end of the support arm;

a lighting arrangement supported in the housing and including a lighting element configured to emit a light, wherein the lamp assembly is reconfigurable between a first configuration where the light is directed downwardly toward the worksurface, and a second configuration where the light is directed forwardly toward the face of the seated user; and

a support member coupled to and extending outwardly from the support arm, wherein the base and the support arm are configured to cooperate to support a personal communication device such that a camera of the personal communication device is directed toward the face of the seated user and the personal communication device is completely horizontally offset from the support arm when supported by the base and the support member.

15. The lamp assembly of claim **14**, further comprising:

a mirror supported by the housing and having a reflective surface, wherein the reflective surface is substantially parallel with the worksurface when the lamp assembly is in the first configuration and faces the face of the seated user when the lamp assembly is in the second configuration.

16. The lamp assembly of claim **14**, wherein the support member includes a substantially rigid bar extending substantially perpendicular to the support arm.

17. The lamp assembly of claim 14, wherein the support arm is pivotably coupled to the base.

18. The lamp assembly of claim 14, wherein the housing is pivotably coupled to the support arm.

19. The lamp assembly of claim 14, wherein at least a portion of the housing is located forward of the base when the lamp is in the first configuration.

20. The lamp assembly of claim 14, wherein the lamp assembly is further reconfigurable to a third configuration where the housing is located at least partially rearward of the base.

21. The lamp assembly of claim 14, wherein the second direction is about 90° from the first direction.

22. A lamp assembly, comprising:

a base configured to be supported on a worksurface;

a support arm having a first end operably coupled to the base, and a second end;

a housing assembly operably coupled to the second end of the support arm and having a central axis, the housing assembly including a hood and a graspable handle extending from the hood; and

a light arrangement supported by the housing assembly and including a light element configured to emit a light, the hood operably coupled to the light element such that rotation of the hood about the central axis controls an intensity of the light.

23. The lamp assembly of claim 22, wherein the graspable handle extends outwardly from an outermost peripheral edge of the hood.

24. The lamp assembly of claim 22, further comprising: a mirror supported by the housing assembly.

25. The lamp assembly of claim 22, wherein the light arrangement includes a reflector.

26. The lamp assembly of claim 25, wherein the reflector is fixed with respect to the hood.

27. The lamp assembly of claim 22, wherein the lighting arrangement further includes a rotary encoder located within the housing assembly and operably coupled to the hood to the lighting element.

28. The lamp assembly of claim 22, wherein the lamp assembly is reconfigurable between a first configuration where the light is directed toward the worksurface, and a second configuration where the light is directed toward the face of the seater user.

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